

13

Date: Thursday, 3/13/2008 10:16:52 AM  
User: Kim Johnston

# Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : FWD X-TUBE EXTENDED HEIGHT GEAR (-011)
Job Number : 37905	
Estimate Number : 10007	
P.O. Number :	Part Number : D205596101
This Issue : 3/13/2008 S.O. No. :	Drawing Number : D205-596-101
Prsht Rev. : NC	Project Number : N/A
First Issue : / /	Drawing Revision : B
Previous Run : 37904	Material :
Written By :	Due Date : 3/27/2008 Qty: 1 Um: Each
Checked & Approved By : <u>JA 08 03 13</u>	
Comment : Est Rev G Removed Bending 05-10-25 JLM	
Est Rev:H ECN 1075 08-01-10 DD	

## Additional Product

Job Number:



Seq. #:

Machine Or Operation:

Description :

2.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy D205-594 bluefile & type labels per PPP D205-596-101 CHG001

2.0

D2889

FWD Crosstube



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

FWD Crosstube

Pick:

Qty	Part number	Description	Batch
1	D2889	Fwd Crosstube	B38664

DP 8-8-12

3.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend as per Dwg D2889

DP 8-8-12

4.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Mark 31.53" for cutting from tangential line in the straight section from D2889 as per Dwg wall template.

\*\*\*Identify off-cuts with batch number & part number and bring them to cnc lathe\*\*\*

see attachment

cmf 08-04-07

5.0

QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

08/08/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 3/13/2008 10:16:52 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD X-TUBE EXTENDED HEIGHT GEAR (-011)

Job Number: 37905

Part Number: D205596101

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut as per Dwg D205-596-101.

2-Deburr & Inspect for surface damage. Polish cut surface. Scribe part # and end of tube.

Batch # on one

see att mf 08-04-07

7.0

QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

S 08/08/12 (80)

8.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat per QSI 005 4.1

Avon 7-8-12

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 08/08/12 (41)

10.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

Prime inside and outside with Immron per QSI 005 4.2

ml 08 08 12 i

(1)

11.0

QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

45 08-08-13

12.0

D3595063450

RUBBER CUSHION



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

RUBBER CUSHION

batch 38500

ml 08 08 13

13.0

MS2192025

Clamp(per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Clamp(per MIL-DTL-8783C)

batch 108224

ml 08 08 13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 3/13/2008 10:16:52 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD X-TUBE EXTENDED HEIGHT GEAR (-011)

Job Number: 37905

Part Number: D205596101

Job Number:



Seq. #:

Machine Or Operation:

Description :

14.0

D28931

Support



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Support

Pick:

Qty Part number Description Batch

2 D2893-1

Support

38124

ml 08 08 13

15.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1- Apply magnobond 6398 as per dwg D205-596-101.

Magnobond 6398 Batch:

2-Install supports and clamps as per Dwg D205-596-101. Torque clamps to 80-100 in lb. as per dwg

see attachment

mf 08-04-07

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

10008-14

17.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

N/A

PTD

18.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-596-101

Location:

P

8/8/14

(X)

19.0

QC21

FINAL INSPECTION W/O RELEASE



Comment: FINAL INSPECTION W/O RELEASE

808108/14

Job Completion

37905 D205-596-101

mf 08-08-14

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
0808-14	17.0	QC4 not necessary Remove perm. Change				0808-14	0808-14

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

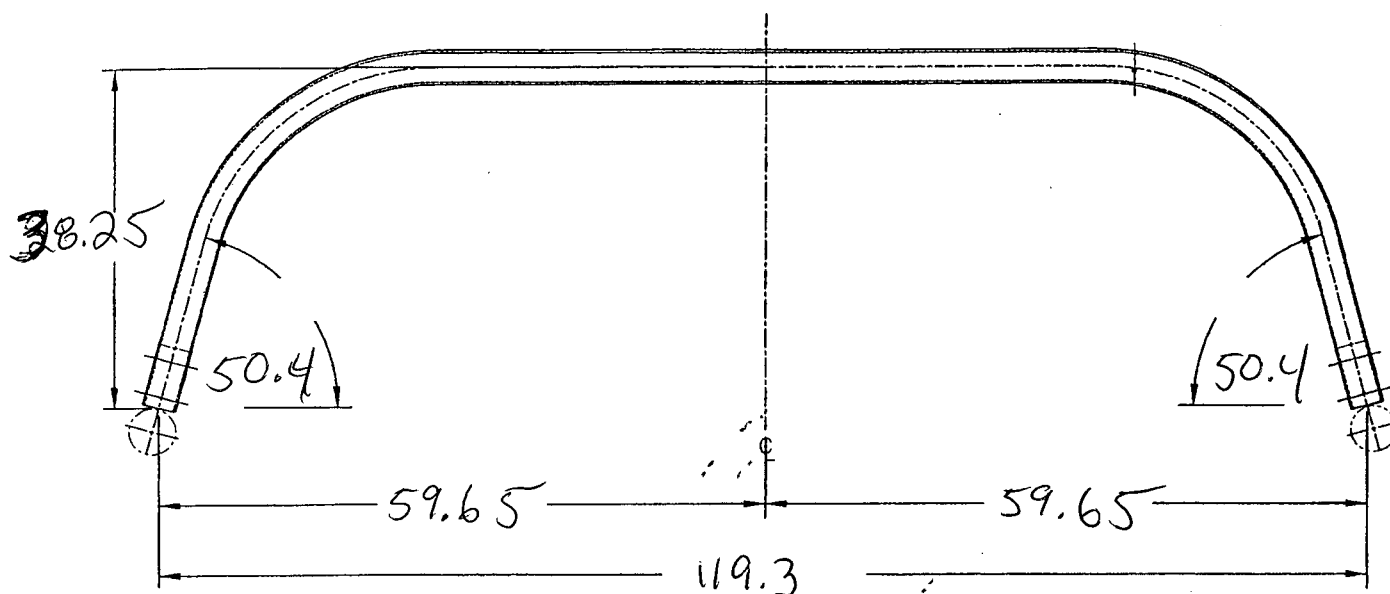
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	37903
<b>Description:</b> Crosstube High-High Fwd		<b>Part Number:</b>	D205-596-101
<b>Inspection Dwg:</b> D205-596-101	<b>Rev:</b> A/B 08.03.17	<b>Page 1 of 1</b>	

Required Dimension	Min	Max
Height	38.2	38.4
1/2 Span	59.5	59.7
Angle	49	52
Total Span	119.0	119.4



Comments

QC15 Inspection	08/08/12
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	<i>[Signature]</i>

**PARTS LIST:**

Qty	Part Number	Description
X	D205-596-101	CROSSTUBE ASSEMBLY, HI-HI FWD
1	D6005-180	CROSSTUBE
2	D2893-1	SUPPORT
4	D3595-063-450	RUBBER CUSHION
4	MS21920-25	CLAMP
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

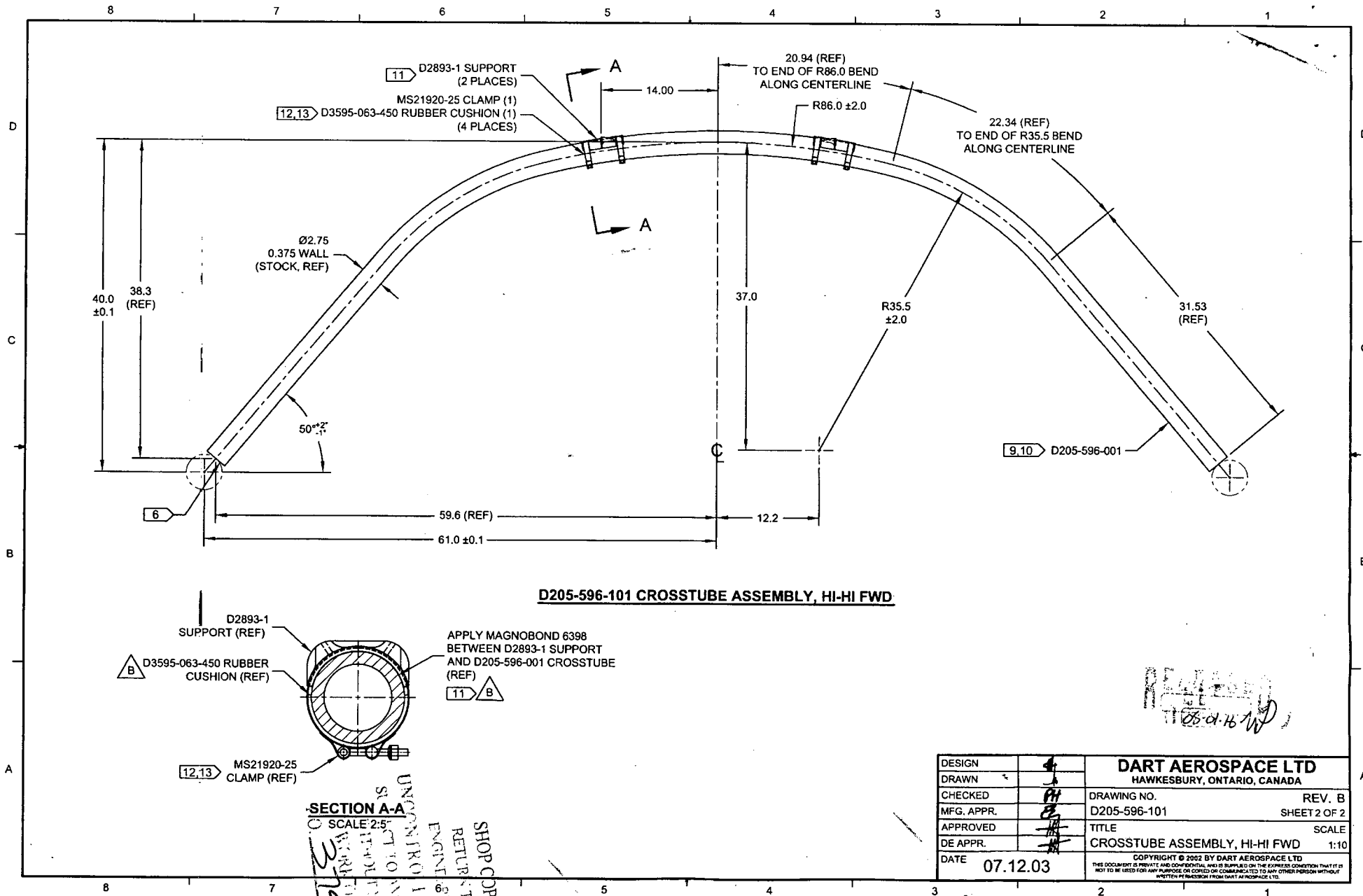
**GENERAL NOTES:**

- 1) MATERIAL: MANUFACTURE FROM D6005-180  
FINISHED LENGTH = 149.60 ± 0.02
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH  
VIBRATING STYLUS
- 7) WEIGHT: 44 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE
- 9) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO  
BENDING IS 6% BASED ON O.D.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE  
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS  
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT  
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2893-1 THAT  
WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER INSTALLATION  
AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-25 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE D2893-1  
SUPPORT ON THE TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE  
CROSSTUBE SUPPORT.  
**NOTE: IT IS ACCEPTABLE TO SUBSTITUTE MS21920-25 CLAMPS WITH LONGER (MS21920-26) OR  
SHORTER (MS21920-24) CLAMPS TO ACCOMODATE VARYING DIAMETERS. ENSURE THERE IS A  
MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.**
- 13) TORQUE CLAMPS 80 TO 100 IN-LB

SHOP COPY  
RETURN TOSUBJECT TO AMENDMENT  
HOLD NOTICE  
WORK ORDER  
NO. 37905

B	SUPPORT NOW MAGNOBONDED; REMOVE D2856-600-851 ABRASION STRIP; UPDATED NOTES; ADDED D3595-063-450 CUSHION; MS21920-25 WAS MS21920-24	MB	07.12.03
A	NEW ISSUE	DS	02.05.27
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD	
DRAWN	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D205-596-101	SHEET 1 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE ASSEMBLY, HI-HI FWD	NTS
DATE	07.12.03	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	





Date: Friday, 04/04/2008 11:21:54 AM  
User: Melanie Fauteux

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : FWD X-TUBE EXTENDED HEIGHT GEAR (-011)
<b>Job Number</b> : 37905	
<b>Estimate Number</b> : 10007	
<b>P.O. Number</b> :	<b>Part Number</b> : D205596101
<b>This Issue</b> : 04/04/2008 <b>S.O. No.</b> :	<b>Drawing Number</b> : D205-596-101
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : 13/03/2008 <b>Type</b> : LANDING GEAR	<b>Drawing Revision</b> : B
<b>Previous Run</b> : 37904	<b>Material</b> :
<b>Written By</b> :	<b>Due Date</b> : 27/03/2008 <b>Qty:</b> 1 <b>Um:</b> Each
<b>Checked &amp; Approved By</b> :	
<b>Comment</b> : Est Rev G Removed Bending 05-10-25 JLM Est Rev:H ECN 1075 08-01-10 DD	

**Additional Product**

**REFERENCE ONLY**

Job Number:



*mf*

**Seq. #:**

**Machine Or Operation:**

**Description :**

4.0

CROSSTUBES

CROSSTUBES RESOURCE 1



**Comment:** LANDING GEAR RESOURCE 1

*DP8-8-12*



Mark 31.53" for cutting from tangential line in the straight section from D2889 as per Dwg wall template.

\*\*\*Identify off-cuts with batch number & part number and bring them to cnc lathe\*\*\*

Job Completion



Date: Friday, 04/04/2008 11:22:18 AM  
User: Melahie Fauteux

# **Process Sheet**

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : FWD X-TUBE EXTENDED HEIGHT GEAR (-011)
<b>Job Number</b> : 37905	
<b>Estimate Number</b> : 10007	
<b>P.O. Number</b> :	<b>Part Number</b> : D205596101
<b>This Issue</b> : 04/04/2008 <b>S.O. No.</b> :	<b>Drawing Number</b> : D205-596-101
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : 13/03/2008 <b>Type</b> : LANDING GEAR	<b>Drawing Revision</b> : B
<b>Previous Run</b> : 37904	<b>Material</b> :
<b>Written By</b> :	<b>Due Date</b> : 27/03/2008 <b>Qty:</b> 1 <b>Um:</b> Each
<b>Checked &amp; Approved By</b> :	
<b>Comment</b> : Est Rev G Removed Bending 05-10-25 JLM Est Rev:H ECN 1075 08-01-10 DD	

**Additional Product**

**REFERENCE ONLY**

Job Number:  *me*

<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
6.0	CROSSTUBES	CROSSTUBES RESOURCE 1

**Comment:** LANDING GEAR RESOURCE 1

1-Cut as per Dwg D205-596-101

2-Deburr & Inspect for surface damage. Polish cut surface. Scribe part # and end of tube.

Batch # on one

*ANM 9-8-12*

Job Completion 

Date: Friday, 04/04/2008 11:23:32 AM  
 User: Melanie Fauteux

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : FWD X-TUBE EXTENDED HEIGHT GEAR (-011)
<b>Job Number</b> : 37905	
<b>Estimate Number</b> : 10007	
<b>P.O. Number</b> :	<b>Part Number</b> : D205596101
<b>This Issue</b> : 04/04/2008 <b>S.O. No.</b> :	<b>Drawing Number</b> : D205-596-101
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : 13/03/2008 <b>Type</b> : LANDING GEAR	<b>Drawing Revision</b> : B
<b>Previous Run</b> : 37904	<b>Material</b> :
<b>Written By</b> :	<b>Due Date</b> : 27/03/2008 <b>Qty:</b> 1 <b>Um:</b> Each
<b>Checked &amp; Approved By</b> :	
<b>Comment</b> : Est Rev G Removed Bending 05-10-25 JLM Est Rev:H ECN 1075 08-01-10 DD	

Additional Product

REFERENCE ONLY

Job Number:



ml

Seq. #:

Machine Or Operation:

Description :

15.0

CROSSTUBES

CROSSTUBES RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1- Apply magnobond 6398 as per dwg D205-596-101.

Magnobond 6398 Batch: 107621

exp: 08/2008 time: 10:50 AM

ml 08 08 13 (1)

2-Install supports and clamps as per Dwg D205-596-101. Torque clamps to 80-100 in lb. as per dwg

Job Completion



Date: Thursday, 3/13/2008 10:16:52 AM  
 User: Kim Johnston

## Process Sheet

13

Customer :	CU-DAR001 Dart Helicopters Services	Drawing Name :	FWD X-TUBE EXTENDED HEIGHT GEAR (-011)
Job Number :	37905		
Estimate Number :	10007		
P.O. Number :		Part Number :	D205596101
This Issue :	3/13/2008 S.O. No. :	Drawing Number :	D205-596-101
Prsht Rev. :	NC	Project Number :	N/A
First Issue :	// Type : LANDING GEAR	Drawing Revision :	B
Previous Run :	37904	Material :	
Written By :		Due Date :	3/27/2008 Qty: 1 Um: Each
Checked & Approved By :	<i>[Signature]</i> 08 03 13		
Comment :	Est Rev G Removed Bending 05-10-25 JLM Est Rev:H ECN 1075 08-01-10 DD		

## Additional Product

Job Number:



Seq. #:

Machine Or Operation:

Description :

0.1

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy D205-594 bluefile &amp; type labels per PPP D205-596-101 CHG001

002

08 03 14

2.0

D2889

FWD Crosstube



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

FWD Crosstube

Pick:

Qty Part number Description Batch

1 D2889 Fwd Crosstube

3.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend as per Dwg D2889

REFERENCE ONLY

4.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Mark 31.53" for cutting from tangential line in the straight section from D2889 as per Dwg wall template.

\*\*\*Identify off-cuts with batch number &amp; part number and bring them to cnc lathe\*\*\*

5.0

QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES